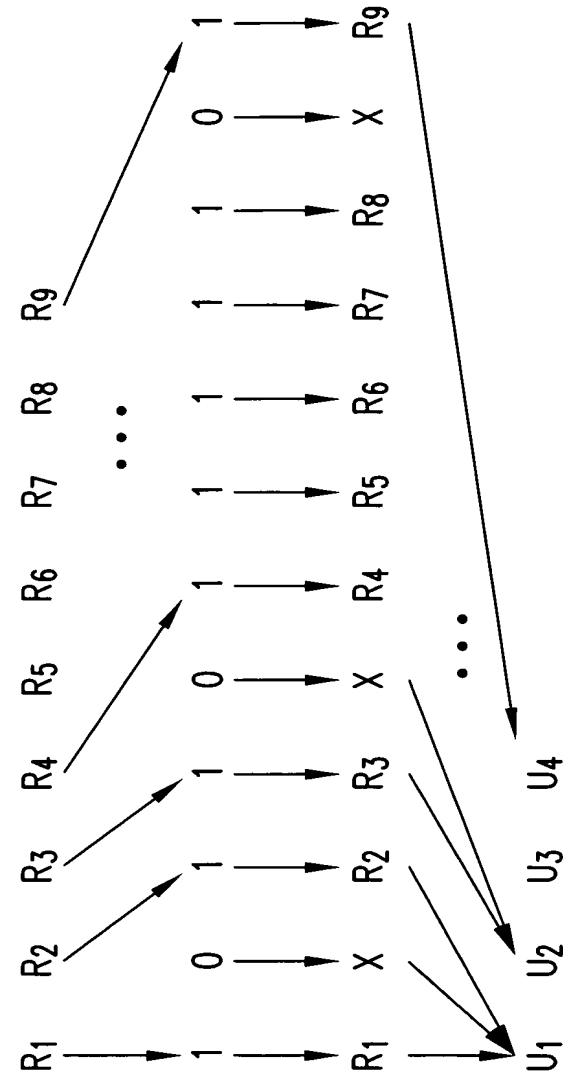
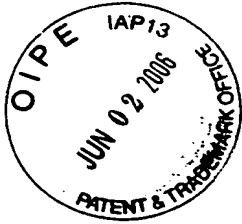


PRIOR ART
 FIG.1



PRIOR ART
FIG.2

R_i = RECEIVED DATA
 210
 P_i = PUNCTURE MASK
 220
 S_i = RECEIVED ENCODED DATA
 230
 U_i = RECEIVED USER DATA
 240

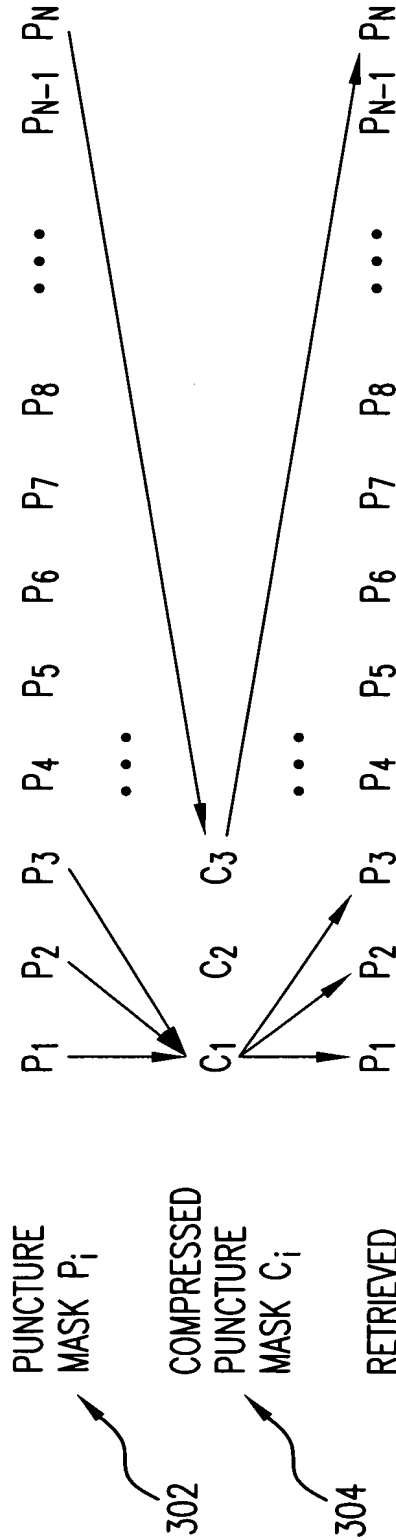


FIG.3

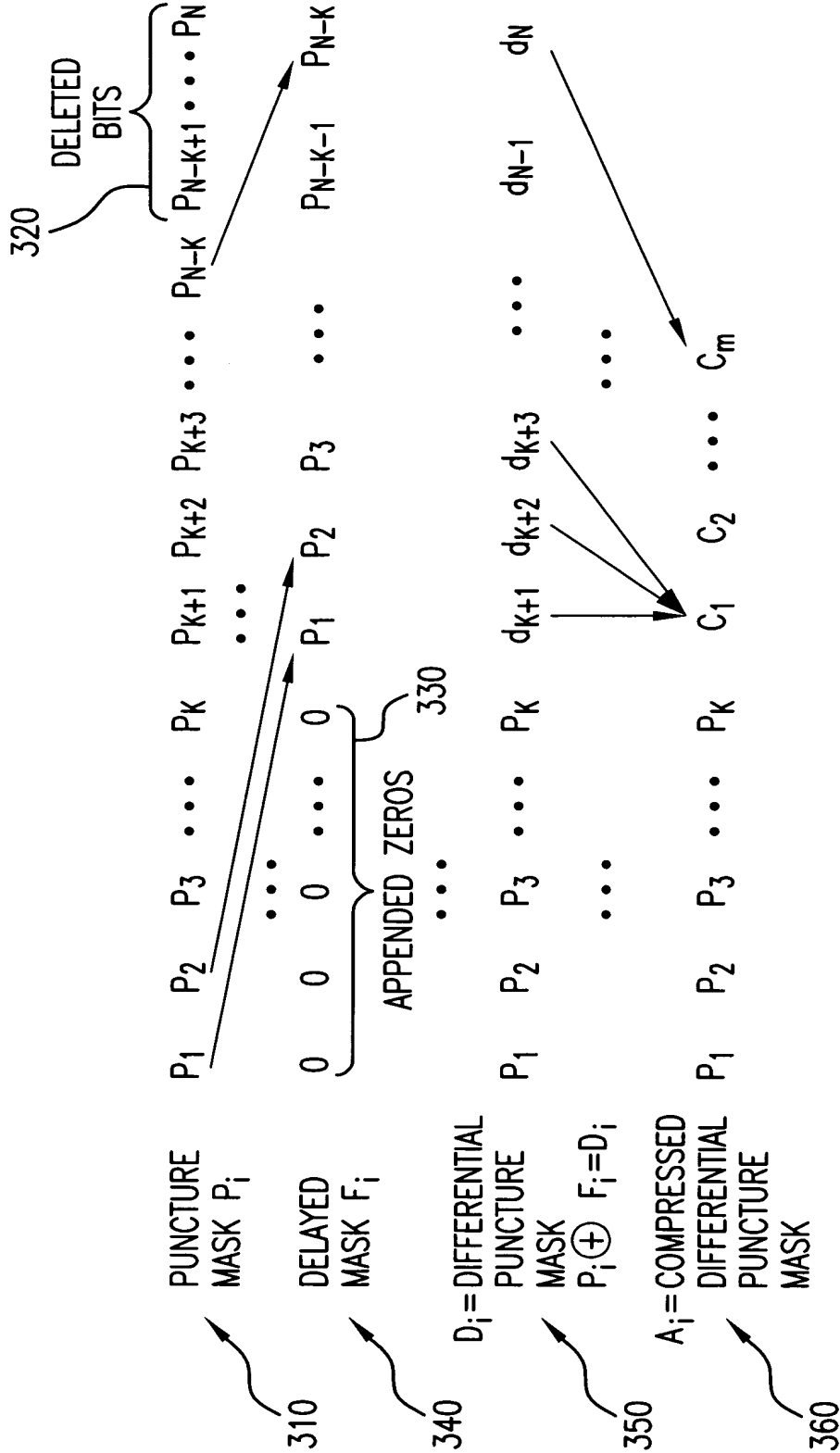
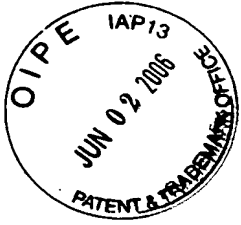




FIG. 5

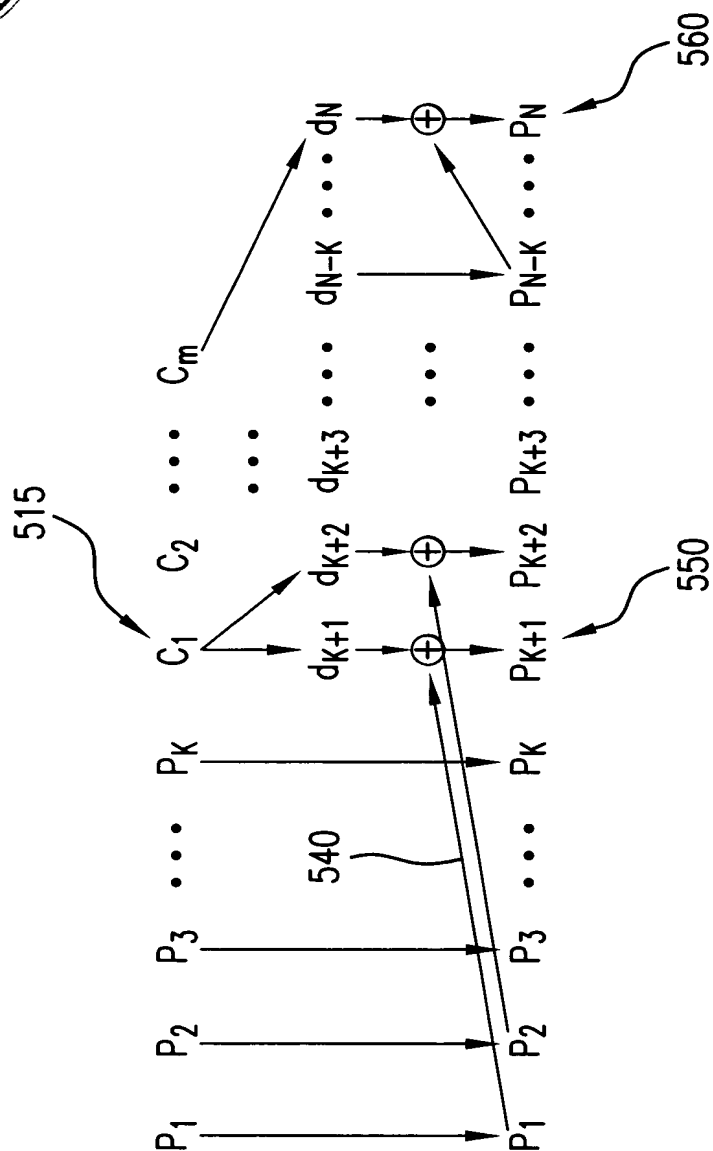
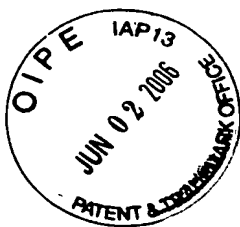


FIG. 6

$A_i = \text{COMPRESSED DIFFERENTIAL PUNCTURE MASK}$

510

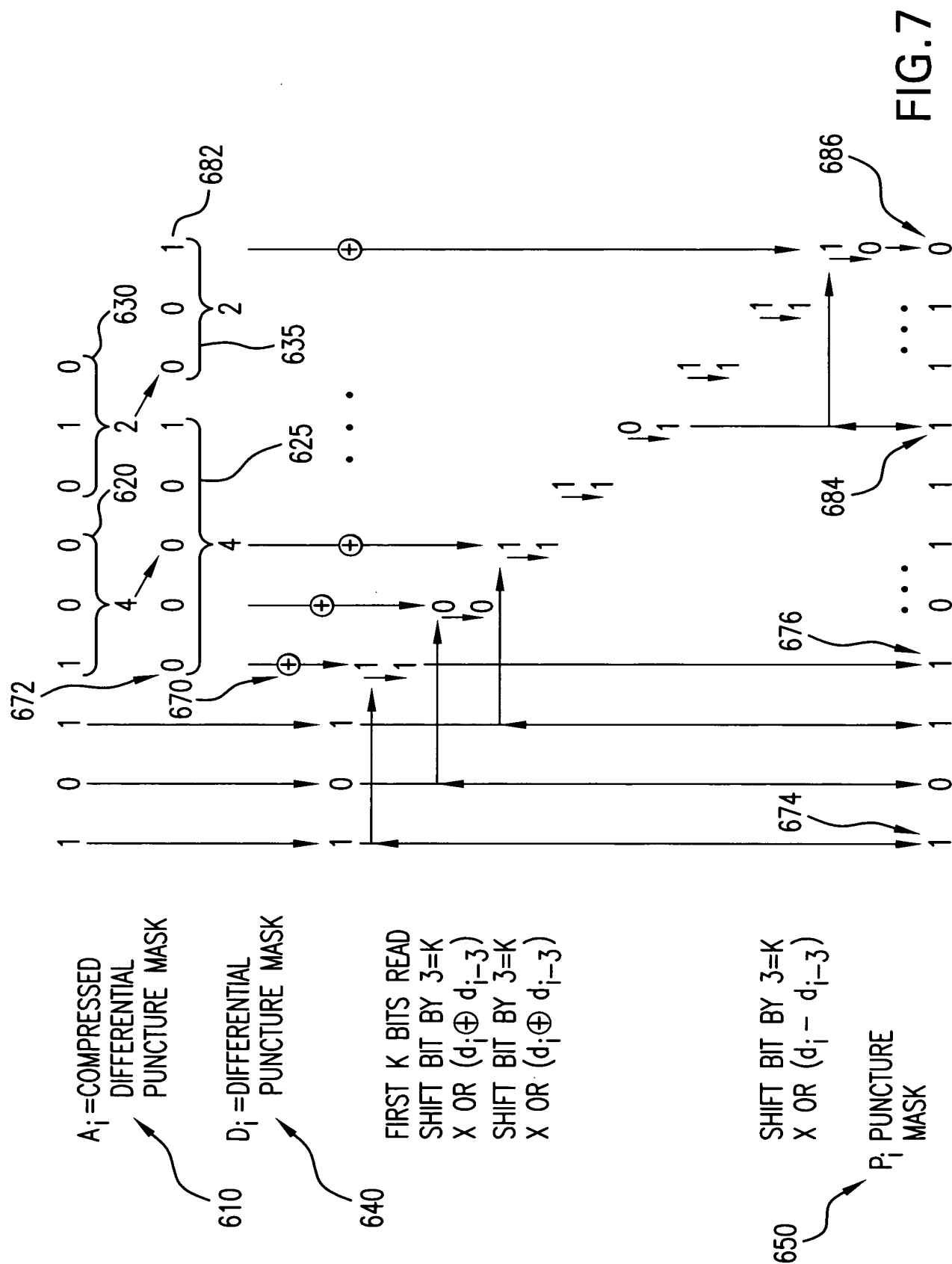
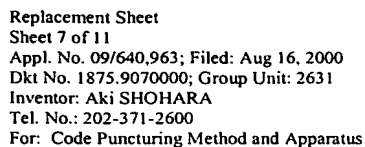
$D_i = \text{DIFFERENTIAL PUNCTURE MASK}$

520

$P_i = \text{PUNCTURE MASK}$

$P_i = D_i \oplus P_i - K$

530



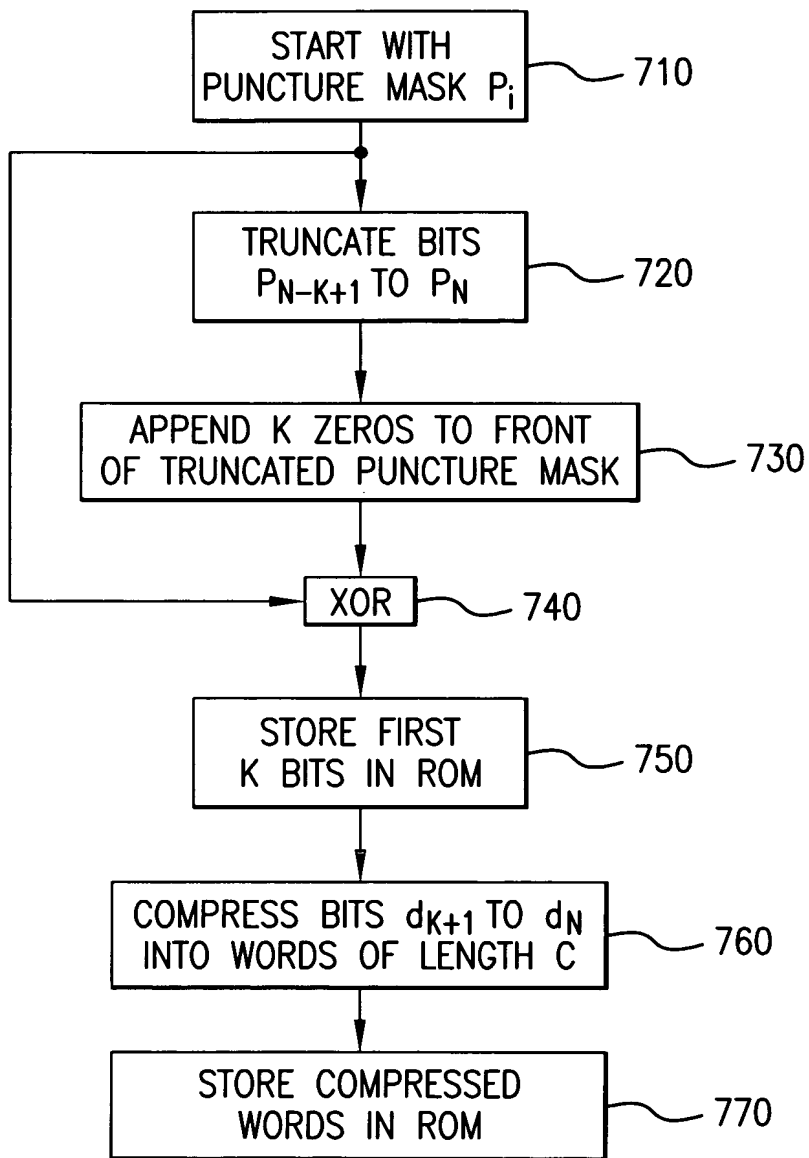


FIG.8

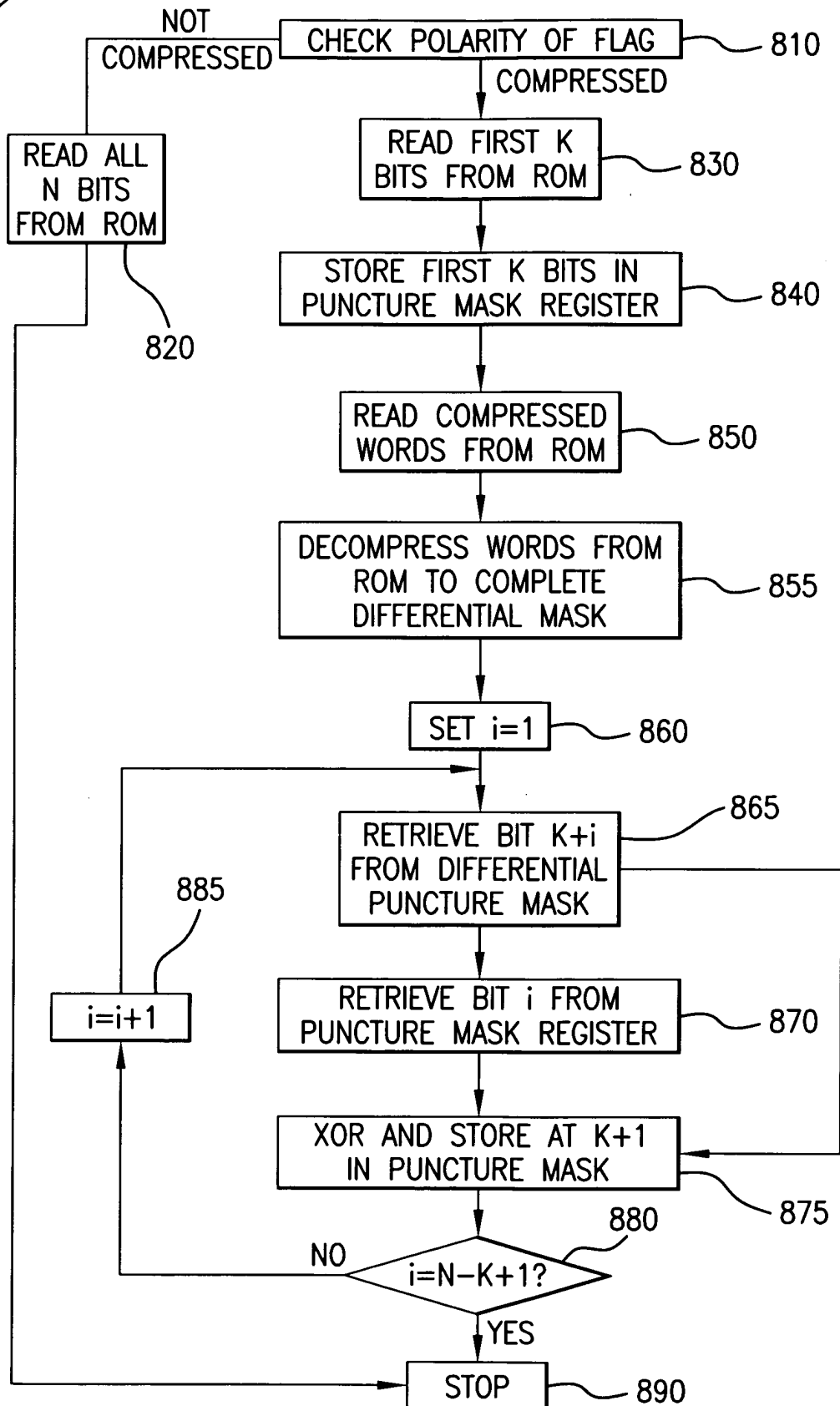


FIG.9

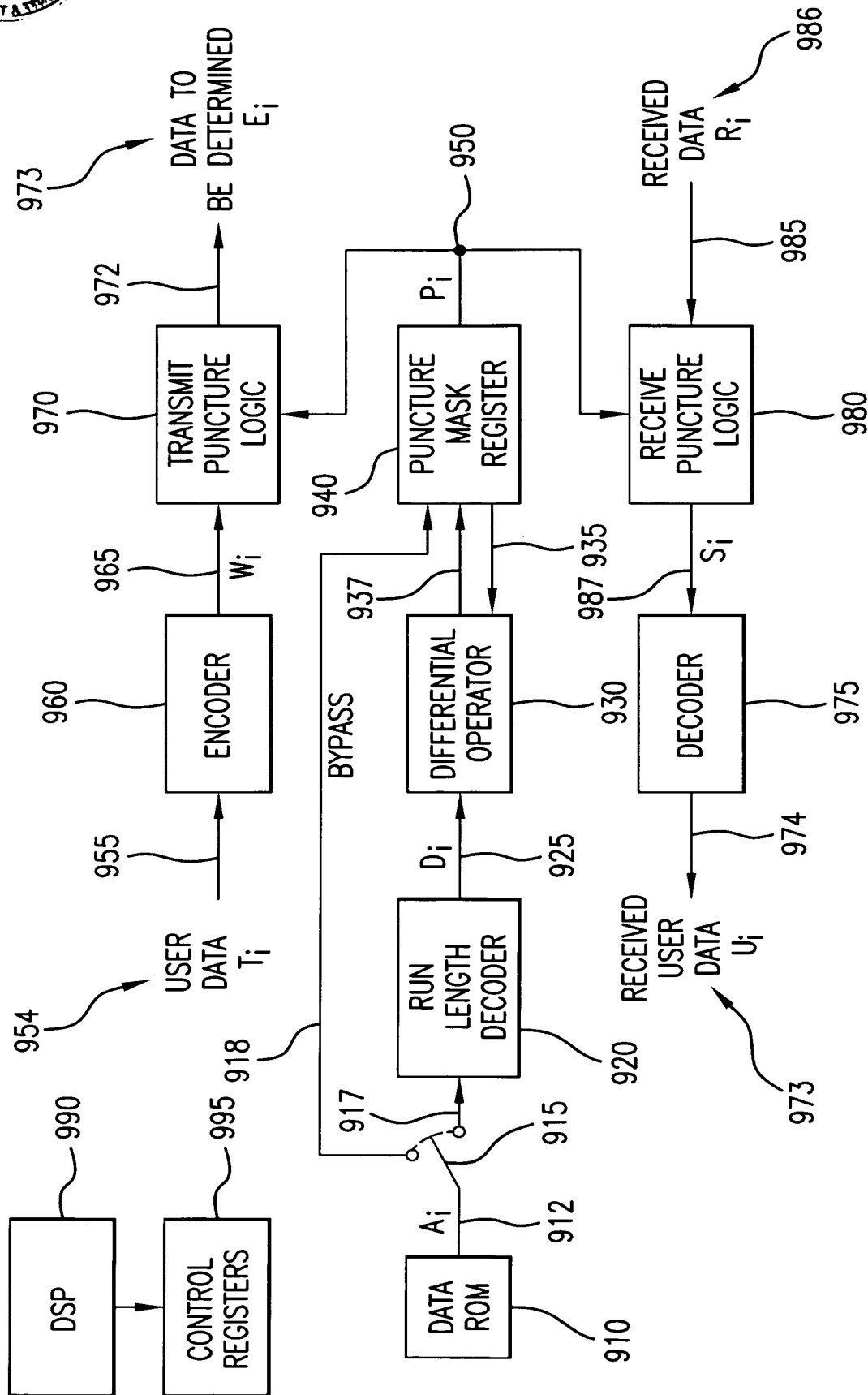


FIG. 10



EGPRS, GPRS, and GSM Data Mode Puncture ROM Requirements

1010 1020 1030 1040 1045 1050 1055 1060 1065

| Mode ID | Mask length N (bits) | Mask length (words) | Mask Period K (bits) | Code Length L (bits) | No. code words M | ROM req K+LM (bits) | ROM Req. (words) | Compress. ratio |
|-----------|-------------------------|------------------------|-------------------------|-------------------------|---------------------|------------------------|---------------------|-----------------|
| TCH/F14.4 | 588 | 37 | 18 | 10 | 2 | 38 | 3 | 12.33 |
| CS-2* | 588 | 37 | 48 | 10 | 1 | 58 | 4 | 9.25 |
| CS-2 | 588 | 37 | 4 | 6 | 25 | 154 | 10 | 3.70 |
| CS-3 | 676 | 43 | 6 | 10 | 1 | 16 | 1 | 43.00 |
| MCS-1 P1* | 588 | 37 | 63 | 9 | 3 | 90 | 6 | 6.17 |
| MCS-1 P2* | 588 | 37 | 63 | 9 | 3 | 90 | 6 | 6.17 |
| MCS-1 P1 | 588 | 37 | 21 | 6 | 17 | 123 | 8 | 4.63 |
| MCS-1 P2 | 588 | 37 | 21 | 6 | 17 | 123 | 8 | 4.63 |
| MCS-2 P1 | 732 | 46 | 6 | 7 | 13 | 97 | 7 | 6.57 |
| MCS-2 P2 | 732 | 46 | 6 | 7 | 13 | 97 | 7 | 6.57 |
| MCS-3 P1 | 948 | 60 | 18 | 8 | 7 | 94 | 6 | 10.00 |
| MCS-3 P2 | 948 | 60 | 18 | 9 | 7 | 81 | 6 | 10.00 |
| MCS-3 P3 | 948 | 60 | 18 | 9 | 9 | 99 | 7 | 8.57 |
| MCS-4 P1 | 1116 | 70 | 3 | 11 | 1 | 14 | 1 | 70.00 |
| MCS-4 P2 | 1116 | 70 | 3 | 11 | 1 | 14 | 1 | 70.00 |
| MCS-4 P3 | 1116 | 70 | 3 | 11 | 1 | 14 | 1 | 70.00 |
| MCS-5 P1 | 1404 | 88 | 9 | 9 | 12 | 117 | 8 | 11.00 |
| MCS-5 P2 | 1404 | 88 | 9 | 9 | 12 | 117 | 8 | 11.00 |
| MCS-6 P1* | 1836 | 115 | 66 | 9 | 9 | 147 | 10 | 11.50 |
| MCS-6 P2* | 1836 | 115 | 66 | 9 | 9 | 147 | 10 | 11.50 |
| MCS-6 P1 | 1836 | 115 | 3 | 7 | 49 | 346 | 22 | 5.23 |
| MCS-6 P2 | 1836 | 115 | 3 | 7 | 49 | 346 | 22 | 5.23 |
| MCS-7 P1 | 1404 | 88 | 18 | 8 | 15 | 138 | 9 | 9.78 |
| MCS-7 P2 | 1404 | 88 | 18 | 8 | 15 | 138 | 9 | 9.78 |
| MCS-7 P3 | 1404 | 88 | 18 | 8 | 15 | 138 | 9 | 9.78 |
| MCS-8 P1 | 1692 | 106 | 36 | 10 | 3 | 66 | 5 | 21.20 |
| MCS-8 P2 | 1692 | 106 | 36 | 11 | 3 | 69 | 5 | 21.20 |
| MCS-8 P3 | 1692 | 106 | 36 | 11 | 3 | 69 | 5 | 21.20 |
| MCS-9 P1 | 1836 | 115 | 3 | 11 | 1 | 14 | 1 | 115.00 |
| MCS-9 P2 | 1836 | 115 | 3 | 11 | 1 | 14 | 1 | 115.00 |
| MCS-9 P3 | 1836 | 115 | 3 | 11 | 1 | 14 | 1 | 115.00 |
| | | | | | | | | |
| Total* | 31960 | 2006 | | | | 1890 | 137 | 14.64 |
| Total | 31960 | 2006 | | | | 2550 | 161 | 12.46 |

*Denotes the case where multiples of the basic puncture matrix are used as the basic period K.

TABLE 1.